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ABSTRACT

A study investigated both quantitative and qualitative differences between learning disabled (LD) and nonlearning disabled (NLD) subjects across three grade levels on two tasks requiring active processing of story grammar. Twelve LD and 12 NLD subjects were randomly selected from grades 4-5, 7-8, and 10-11 in a southwestern Florida school district. In the first task, subjects gave an oral retelling of "Judy's Birthday," a story used in a previous study. For the second task, a creative writing task, a story starter was selected from another story grammar study. For the first task, protocol scoring consisted of parsing and categorizing 25 propositions for "Judy's Birthday," and identifying the intercategory, intracategory, and single statement reversals, as well as the substitutions, additions, and deletions of material. Scoring procedures for the second task consisted of simply parsing and categorizing the story propositions. Analysis revealed that for both tasks, there were no developmental differences in relation to either story comprehension or production. However, there were significant differences between LD and NLD students in the amount and type of information included in the retellings and written stories. Results suggested that LD students had acquired a rudimentary but not fully developed schema for narrative prose. (Author/MM)

# Story Grammar and Learning Disabled Students' Comprehension and Production of Narrative Prose

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## Abstract

This study investigated both quantitative and qualitative differences between learning disabled (LD) and nonlearning disabled (NLD) subjects across three grade levels on two tasks requiring active processing of story grammar. For both tasks there was no evidence of developmental differences in relation to either story comprehension or production. However, there were significant differences between LD and NLD students in the amount as well as the type of information included in the retellings and written stories. The results provide support for the hypothesis that LD students have acquired a rudimentary but perhaps not fully developed schema for narrative prose.

The reading comprehension and written language deficits that characterize many LD individuals could be attributable to a lack of story schema knowledge, a failure to effectively use story schema knowledge during comprehension tasks, or a lack of awareness and control in applying knowledge when writing stories. The limited research conducted in text structure with LD individuals suggests that they do not have a deficient representation of story grammar, but rather may be deficient in their discrimination of levels of meaning in prose passages and be less aware of subtle differences in importance in story propositions (Worden, 1986).

Stein and Glenn's (1979) story grammar provides the theoretical framework for the present study of LD students' story comprehension and production. Their grammar consists of the following seven categories (Nezworkski, Stein, & Trabasso, 1982; Stein & Glenn, 1979): a) major setting, b) minor setting, c) initiating events, d) internal responses, e) attempts, f) direct consequences, and g) reactions. These elements are divided between two primary units: settings, which include information from both the major and minor settings; and episodes, which include the other five categories and their temporal or causal connections. The objectives of the research are reflected in the following two-part question: Are there significant differences between LD and NLD intermediate level, junior high, and senior high students on a) story retellings after simultaneously reading and listening to a story, and b) hand-

written stories when presented with a story starter?

## Method

Twelve LD and 12 NLD subjects were selected randomly from three grade levels in a southwestern school district: a) intermediate level - fourth and fifth grade students, b) junior high - seventh and eighth grade students, and c) senior high - tenth and eleventh grade students. Two factors, grade level and condition, were combined factorially to yield six between-subject cells. The resulting design was a 3 grade level (grades 4-5 vs. grades 7-8 vs. grades 10-11) by 2 condition (LD vs. NLD) completely between subjects plan.

"Judy's Birthday," a story from the Stein and Glenn (1979) study was selected for Task One. For Task Two, the creative writing task, a story starter was selected from another story grammar study (Gordon & Braun, 1985). Subjects were individually administered the tasks in one session. Two graduate students who had been trained in task administration procedures tested half of the students in each group. Tasks were counterbalanced to control for order effect. Although there was no time limit for the tasks, they were completed within a forty-five minute period by all subjects. Procedures similar to those used by Stein and Glenn (1979) were employed for scoring the protocols from Task One. In addition to parsing and categorizing the 25 propositions for "Judy's Birthday", two raters also identified the intercategory, intracategory, and single statement reversals and the substitutions, additions, and deletions of material.

Interrater reliability averaged 92% for this scoring procedure; interrater reliability for number of additions was 81%.

For Task Two, scoring procedures consisted simply of parsing and categorizing the story propositions. Interrater reliability for the total number of units was 96%; reliability for categorization could not be calculated. The second scoring procedure for the story completions focused on three aspects of the story: a) cohesion, b) organization, and c) episodic structure. A Likert-type scale was constructed, and scores ranged from a low of 1 to a high score of 5. Interrater reliability for each component of this measure averaged 80%.

## Results

Results of the 3 by 2 (Grade by Condition) MANOVA for Task One indicated a significant main effect for condition only. In order to determine the Task One dependent variables responsible, a series of univariate F-tests were conducted for each dependent variable. Only three of these were significant: total units recalled, internal response, and additions. Results of the 3 by 2 (Grade by Condition) MANOVA for Task Two also revealed a significant main effect for condition. Follow-up univariate F tests identified six contributing variables. From most to least robust, these were total units, internal response, direct consequences, major setting, reactions, and attempts. Data from the holistic scoring of Task Two were then submitted to the same type of 3 by 2 (Grade by Condition) MANOVA, this time with Cohesion, Organization, and Episodic Structure as multiple

dependent measures. Inspection of these data again revealed a significant main effect for condition. Follow-up univariate F tests ascertained that all three variables contributed to this significant main effect.

## Discussion

The results of the investigation support findings from previous story schema research and also provide additional insight into the processing patterns and characteristics of learning disabled students. For both tasks there was no evidence of developmental differences in relation to either story comprehension or production. This supports the hypothesis that most school-aged children have acquired knowledge of story schema and are able to use that knowledge during story comprehension and production tasks. However, there were significant differences between LD and NLD students in the amount as well as the type of information included in the retellings and written stories. Learning disabled students compared to NLD students across grade levels recalled significantly fewer total units of information and significantly fewer internal responses of characters after simultaneously reading and listening to a story. Similar results were obtained on the writing task. That is, LD students produced significantly fewer total units than NLD students across the grade levels. The most salient differences on this task were found in the internal response, direct consequence, and major setting categories.

Effective use of a story schema presumably requires

instantiation of new information into an existing conceptual framework that reflects the structure of narrative prose, so that a coherent representation of a story can be constructed (Stein, 1982). While there is evidence that LD individuals have acquired schematic knowledge of stories (Worden, 1986), there is also evidence that they manifest deficiencies in relation to activation of prior knowledge, conceptual knowledge, and strategic knowledge (Torgesen, 1986), all of which may affect story processing. The outcome of the present study provides support for the hypothesis that LD students have acquired a rudimentary but perhaps not fully developed schema for narrative prose. In other words, young children and LD students may process most categories of information that are reflected in a story grammar, but may not effectively process characters' internal responses or motives, thoughts, and feelings. Additionally, they may not have fully developed the ability to express affective information, which could affect their fluency of expression as indicated by their significantly shorter recalls. This processing deficiency could result from lack of expertise in the interpretation of human intentionality, social interactions, and problem solving, which appears necessary for the development of story schemata (Mandler, 1982; Stein, 1982).

The significant difference between LD and NLD students' additions to their retellings suggests that NLD students not only recall more information than LD students, but also include more information when they retell stories. However, further

inspection of the information added revealed that the types of additions were proportionally similar for LD and NLD. For example, 53% of the additions by both LD and NLD students ere conjunctions such as and, but, so, and because, and 8% of the additions by both groups were pronouns. Based on these data, it appears that if LD students were able to recall more information, particularly in the internal response category, their protocols would more closely resemble NLD students' both in quantity and quality.

Analyses of the data collected on measures of story writing also yielded significant main effects for condition suggesting that stories written by LD students are incohesive, unorganized, and incomplete in relation to episodic structure. However, it should be noted that only nine of the 36 LD students in the study did not include at least one complete episode defined by the criteria described earlier in this paper. While one previous study conducted with LD students concluded that they are able to produce complete stories (McArthur & Graham, 1987), two studies found evidence that LD students' written stories did not meet the criteria for a complete story (Barenbaum et al., 1987; Nodine, Barenbaum, & Newcomer, 1985). McArthur and Graham (1987) also found that LD students produced fewer starting events, explicit goals, or emotional reactions across all three conditions in their study: story dictation, handwritten stories, and stories produced on a word processor.

In the present study, general fluency problems appeared to

be evident in the story retellings as well as in the writing of LD students. The quantitative differences found may have been affected by the low number of characters' internal responses LD students included in their story recalls and written completions. It seems possible that if LD students could be taught to focus on the goals, motives, thoughts, and feelings of the characters in the stories they read and write, story length would increase proportionally to the increase in the internal response category. Although there was no main effect for grade, inspection of the data indicated a tendency for senior high LD students to write more organized stories than the intermediate level or junior high LD students. Future story grammar research with LD learners should focus on techniques to facilitate affective information processing in stories, such as characters' cognitions and emotions, in order to fully activate the schemata necessary for comprehending and producing narrative prose.

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